1997/98 Annual Report

to

explore
and **explain**

the natural world

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Letter from the Chairman

The most important development in the recent year was the appointment of J. Patrick Kociolek, Ph.D. as the Academy's Executive Director. Pat had over six years experience as the Director of the Research Department and as the Board and I worked with him as interim Executive Director it became clear he has the knowledge, judgement and leadership skills to lead this institution into the 21st century. The Academy is fortunate to have Pat Kociolek and his multi-faceted talents guiding us in the years ahead.

Our focus and energy has been directed at planning for the future. With this in mind, among Pat's initiatives – crafted in collaboration with the Academy Board – is a creative "visioning process" for designing the Academy of the 21st century. This process will tap into the collective wisdom of museum-goers, school teachers, students, scientific researchers, exhibit builders and community members to determine how the Academy can best enhance its programs and exhibits to provide our visitors with even more exciting and rewarding experiences. We are giving all those interested an opportunity to provide ideas that will shape our future. This will result in renewed education and exhibit presentations as well as technological modernization of much of what we do at this remarkable institution. At the same time we are finding a deep and broad appreciation for many of the existing programs and exhibits. This too will be a part of our future.

Concurrently much work is being done to plan for the seismic upgrading, modernization and rehabilitation of our physical structure. There is a clear need for the expenditure of sizable capital on our buildings, most of which have received very little capital funds for many years. The Academy staff and the Trustees are studying the priorities and critical needs as well as the alternative means to finance them.

This is an exciting time at the California Academy of Sciences. We are preparing the institution to be able to "explore and explain the natural world" well into the 21st century. It is a challenging and complex task. The Academy is fortunate however to have a hard working staff, a dedicated Board of Trustees and most importantly many friends and supporters among the people and leaders of San Francisco.

When the "Academy of the 21st century" is completed all of the extended Academy family will have played a part and will be proud of the result.

W. Richard Bingham

Response from the Executive Director

I am profoundly honored by the opportunity to help guide this institution as it re-creates itself for the future. And I thank Chairman Bingham and the Board for entrusting this responsibility to me. I have loved the Academy and directly served its mission to explore and explain the natural world since I joined the research department in 1989 as a diatomist.

Those familiar with the microscopic creatures called diatoms - probably from their use of the snail deterrent, diatomaceous earth - will understand when I say that my "world view" could not have changed more dramatically. I no longer study minuscule diatoms through a microscope; these days, the "big picture" of the Academy's future commands my attention.

Still, some things remain the same. Wherever you go, Darwin's laws apply. In museums - just as in nature - survival of the fittest is an immutable rule. The Academy competes with other research facilities, educational institutions, and natural history museums, planetariums and aquariums for audiences, volunteers, and, of course, funding.

Fortunately, the Academy has singular competitive advantages. It is unique - the only institution in the country which combines a natural history museum, planetarium and aquarium under one roof. It also boasts a world class biodiversity research program, whose influence grows as our work becomes increasingly accessible via the Internet.

My goal for the future is simple - to magnify the Academy's unique strengths as we continue striving for the excellence in both facilities and programming that has always been central to the vision of the Academy's role in San Francisco. We have made an extremely positive beginning, and I see nothing to keep us from achieving excellence in all we do.

To give credit where it is due, this striving for excellence is the cumulative result of hundreds of people consistently giving their best, throughout the Academy, in staff and volunteer roles alike. Their dedication to science, to education, and to the Academy and San Francisco are what lured me away from diatoms. They are the deciding factor that will not only ensure the Academy's survival but that will carry into the millenium a stronger, more vibrant defender of diversity than ever before.

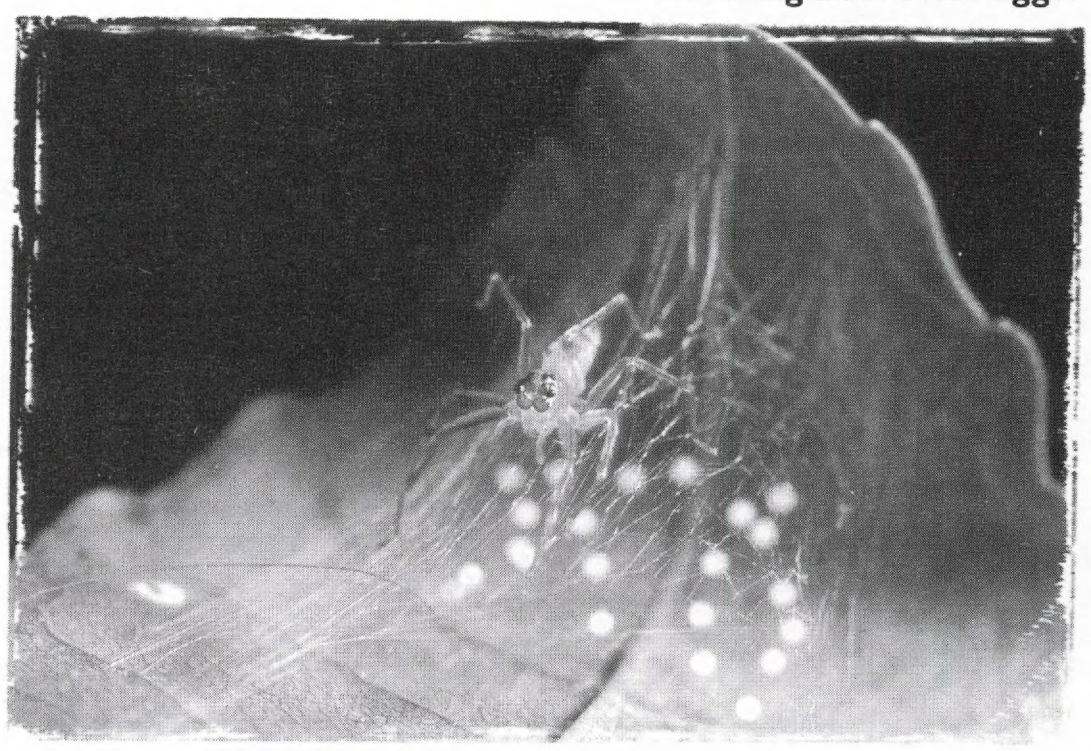
All of us are forever in their debt … none more than I.

J. Patrick Kociolek, Ph.D.

Reflecting both its longtime mission and its intention to be a major participant in biodiversity research worldwide, the Academy's expedition to Madagascar stands as one of the Research Division's most meaningful undertakings of the 1997-98 year.

During this, the inaugural project of the Academy's new Center for Biodiversity Research and Information (CBRI), a team of seven Academy research scientists and its editor and photographer, was posted to the fragile – and extremely threatened – ecosystem of Madagascar, off Africa's southwest coast.

The fourth largest island in the world, Madagascar is an environmental treasure chest. It is home to all the world's lemur species, 70 unique song birds, and 1,000 species of orchids. But, according to Dr. Charles Griswold, team leader of the first Academy expedition, more than 90 percent of Madagascar's animal species are arthropods – spiders, predaceous beetles, wasps and flies, lace wings and ant lions, plant hoppers, and the like. His team's mission was to collect specimens to establish baseline data on Madagascar's diverse arthropod population, while also educating Malagasy university students and helping the government formulate further plans for preservation of and ecotourism within Ranomafana National Park.



A jumping spider hovering above her eggs.

Gathering – with the help of their Malagasy students and field workers – thousands of arthropod samples, the Academy team easily accomplished the goals of the first expedition and discovered perhaps a thousand new species in the process. Among them was a previously unknown trapdoor spider and its nest. This exciting find – an animal only a few millimeters long – is meaningful not only because the spider had never before been discovered but also because the group as a whole is reclusive and, thus, rare in collections.

Entomologist Charles Griswold collecting specimen in Madagascar's Ranomafana National Park.

Cataloging of the specimens and entering information into the Academy's database has already

Research

Research 1997/98 at a glance

- Departments conducting original research: aquatic biology, anthropology, botany, entomology, herpetology, ichthyology, invertebrate zoology & geology, ornithology & mammalogy.
- Research projects underway: 27 scientists are conducting studies in 55 countries.
- Size of collections: 16 million fossils, plant and animal specimens and artifacts; 185,000 volumes in the main and eight departmental libraries.
- Specimens loaned to educational institutions and other scientists: 41,904
- Number of visiting scientists: 937 representing 23 countries.
- Interns and other students trained: 25
- Total number of departmental visitors: 3,780
- Volunteer support: 173 volunteers performed 10,626 hours of work.
- Seminars, lectures and other educational presentations made: 56
- A number of departments updated and posted collection inventories at the Academy web site (www.calacademy.org), making the Academy among natural history museums a leader in computerizing data on its collections.

begun. Thus, through the Internet, some of the world's least accessible arthropod specimens will soon be available for study by both Malagasy and international scientists, who may previously never have seen their like.

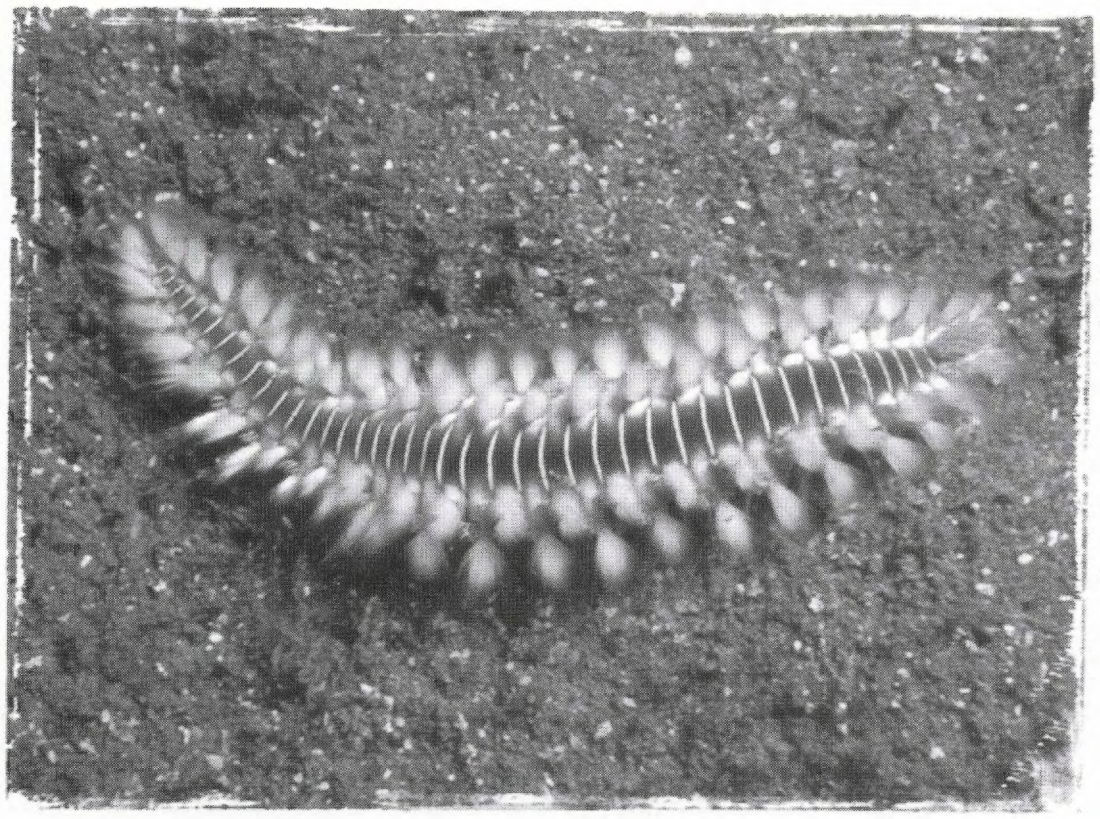
Far Flung Expeditions

Meanwhile, on a continent halfway around the world, Academy botanist Dr. Frank Almeda was making collections that promised to unlock the secrets of chromosomal and molecular evolution of the Princess Flowers, a plant family which he has studied for some 20 years and with which Brazil is abundantly blessed. (Of 5,000 known species, Brazil boasts about 1500.)

Merely being allowed into the country on a scientific expedition required sponsorship by a Brazilian colleague. Fortunately, at a conference in 1991, Dr. Almeda discussed possible collaboration with Brazilian botanist Angela B. Martins. She not only agreed to be his sponsor, she sent one of her doctoral students along on Dr. Almeda's expedition to the campo rupestre habitats of the Brazilian interior. Although the vast interior of Brazil is much less publicized than the Amazon or Atlantic rainforest, it, too, is another biodiversity hot spot that fortunately has not experienced the widespread destruction that has plagued tropical rainforests around the world. Its importance is such that the Academy expedition was underwritten by the National Geographic Society and a private donor.

The watchful gaze of a Madgascar chameleon.

For two weeks of the investigation, Dr. Martins and additional students joined the field study, and she will come to the Academy to continue her work with Dr. Almeda later this year. Moreover, two of her students are



T. GOSLINGER

The beautiful but dangerous Madeira fire worm.

separately involved in collaborative studies with Dr. Almeda. And Dr. Almeda himself is now engaged in chromosome analysis of materials collected on the expedition; with colleagues in Missouri and Wisconsin he will also study DNA sequences to gain valuable insights into the evolutionary history of Princess Flowers.

Underscoring the growing international flavor of the Academy's many scientific collaborations, Invertebrate Zoologist Dr. Terry Gosliner participated in a 10-day NATO-sponsored expedition with two Portuguese and Spanish counterparts to collect opisto-branchs (sea slugs) off the coast of Madeira. Their research yielded a half dozen previously undiscovered species of the colorful marine animal. Co-investigator Dr. Juan Lucas Cervera will spend two weeks carrying out further research at the Academy in the near future.

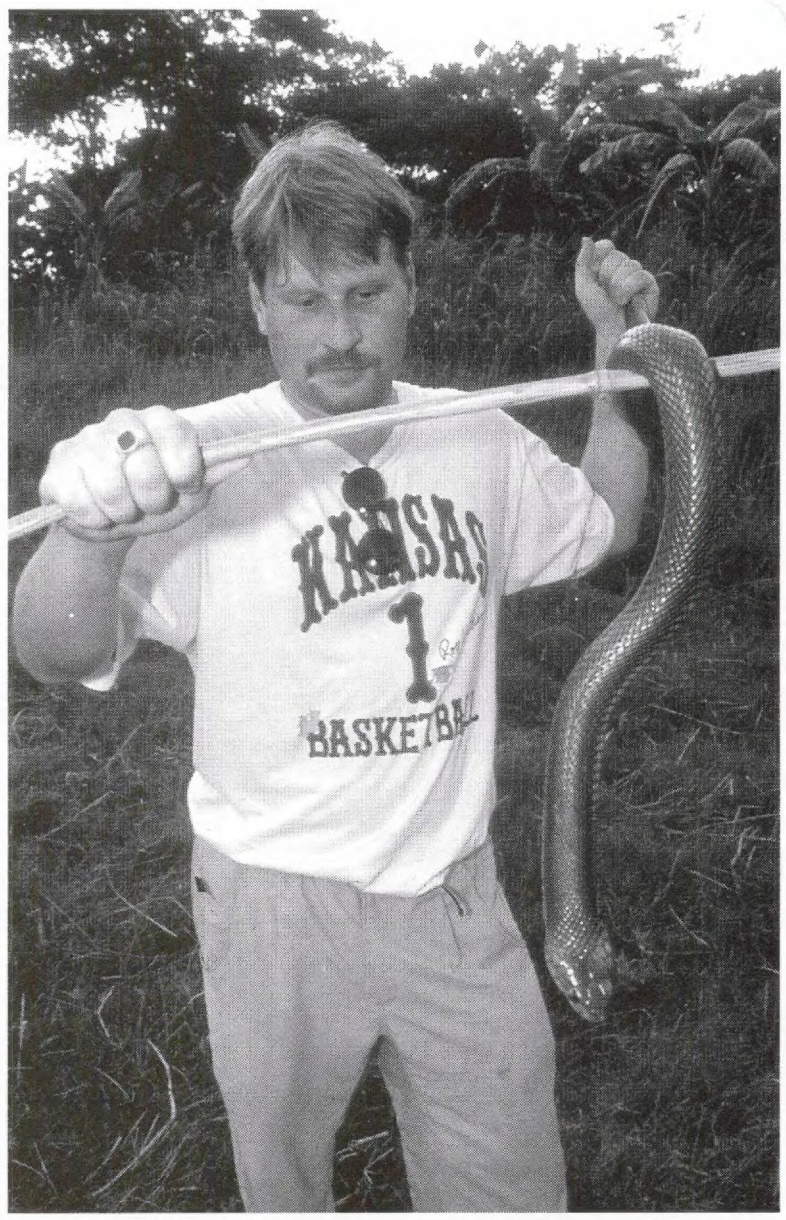
Herpetologist Dr. Joe Slowinski's successful field work in Burma added more than 1,000 new specimens to the Academy's collections. He also provided Burmese forestry officials desired training in collection methods and biodiversity issues.

In total, 27 Academy scientists conducted studies in 55 countries around the globe, adding more than a million plant and animal specimens to the Academy's already space-shy collections. As the Academy begins to reinvent itself for the next century, more and technologically upgraded storage is high on the Research Division's "must have" list.

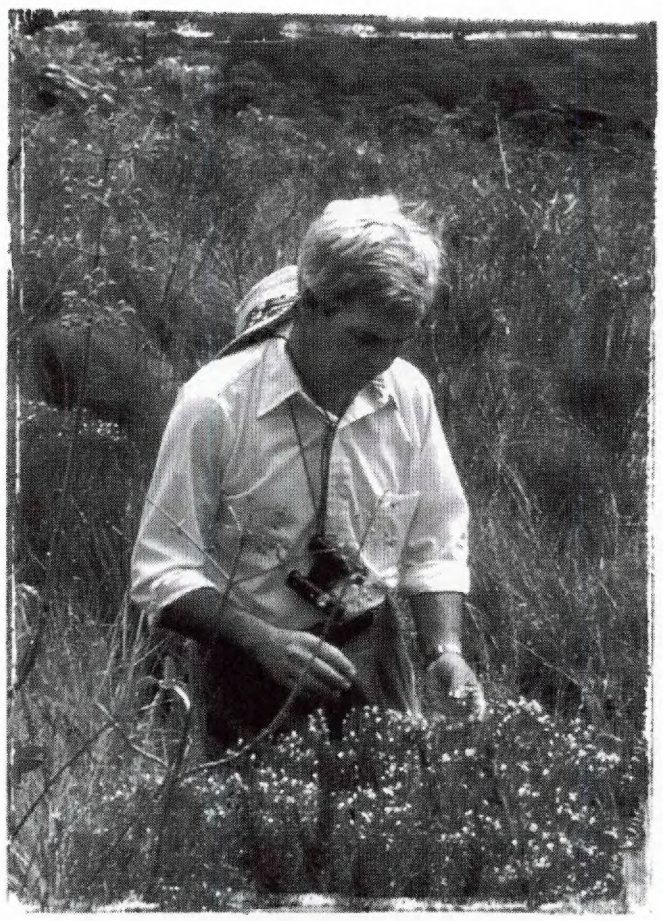
Educating

Tomorrow's Scientists

Carrying forth the Academy's dual mission to explore and explain the natural world, the Research Division has intensified its efforts to train the next generation of research scientists



Herpetologist Joe Slowinski beguiling a live monocled cobra.



RUY J. V. ALVES

Academy botanist Frank Almeda collecting Melastomataceae on Serra de São José in Brazil.

and systematists. In addition to on-going internship programs, the Division's National Science Foundation-funded Summer Systematics Institute recorded its third year of successful operation. In all, since the program's beginning, 27 interns from 22 institutions have been chosen for summer systematics training from 185 internship applicants representing 85 colleges and universities.

These chosen interns and their mentor research partners have published 17 scientific papers, and four former interns have reported project results before international scientific congresses. In line with NSF goals, 70 percent of the interns have been women. Most important, of the 16 participants who have graduated from college, 11 have gone on to graduate school in the biological sciences.

The Academy's two-year-old collaboration with San Francisco State University is also showing remarkable growth. The number of thesis projects being directed by Academy scientists/adjunct faculty members has doubled, as has the number of dual appointments to both Academy staff and SFSU faculty. In addition, two Academy researchers continue to teach systematics at Stanford University.

While the Division's efforts have resulted in sharply increased interaction with California and U.S. university and graduate students, the Internet is also making possible a burgeoning number of collaborative research projects with students – as well as scientists – around the world.

With the tremendous jump in the collections' size, the project to catalog all 16 million specimens preserved in trust at the Academy is both incredibly ambitious and indescribably worthwhile.

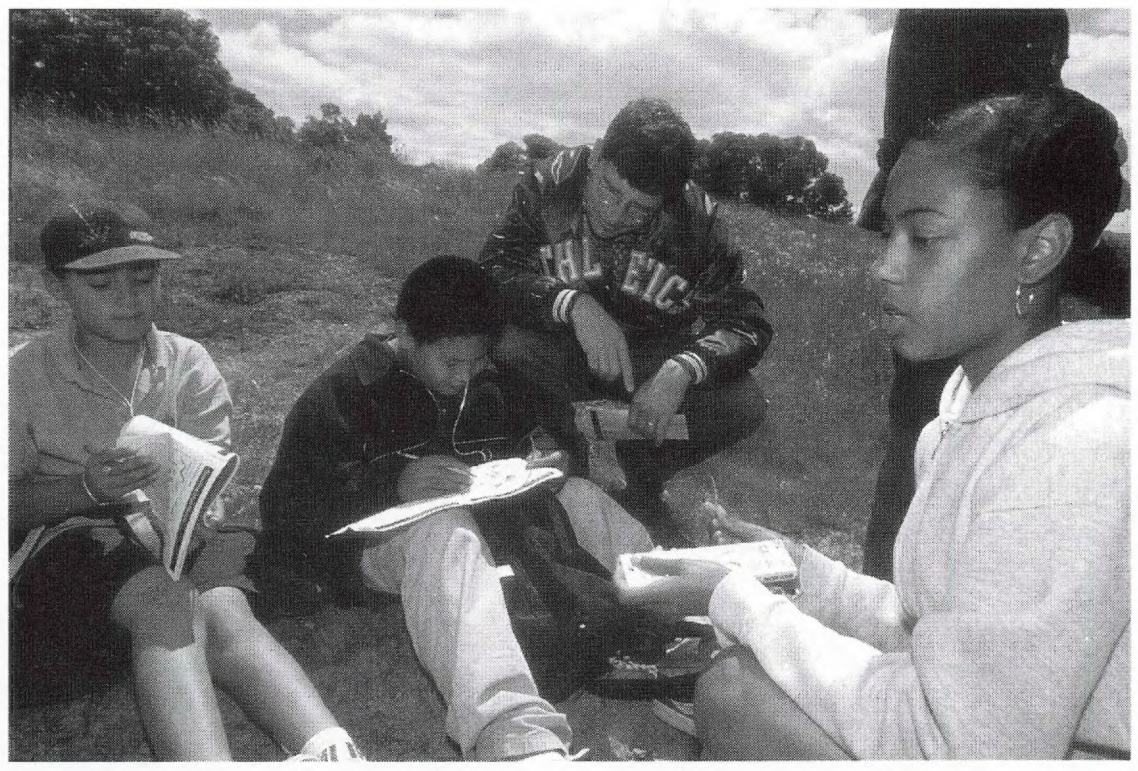
Growth and Use of Collections in Research Departments – 1997-98

Department	Total specimens accessioned	Total specimens loaned	Total visitors
Anthropology	22	n/a	n/a
Aquatic Biology	n/a	n/a	n/a
Botany	15,000	7,412	301
Entomology	185,679	24,698	2,415
Herpetology	2,464	1,569	766
Ichthyology	2,740	4,887	64
Invertebrate Zoology & Geology	19,100	2,991	71
Ornithology & Mammalogy	322	347	139
Totals	225,337	41,904	3,726
Total holdings in all collections	**16,088,450**		

Long San Francisco's preeminent center for science education, in recent years the Academy Education Department has honed its focus, tapping the collections, the scientists and other resources of the Academy – including Golden Gate Park and other Bay Area field sites – to provide "real education about real science." The department-wide commitment to teaching serious science has guided all Education activities during the past year.

One program that embodies the department's devotion to hands-on scientific exploration and learning is Science at Shoreline, which has now completed its first full academic cycle. This program utilizes the tidelands of Shoreline Park in Mountain View as a field site to instruct 60 eighth grade students in marine biodiversity during the fall. In spring, these same eighth graders become Shoreline docents for 320 local third graders on school field trips to the park.

Programs evolve, just as species do, and Science at Shoreline has attracted a new partner – the Marine Science Institute in Redwood City – to supplement the work of the original collaborators – the Academy, the Alza Corporation, Shoreline, and Crittendon Middle School. The program will also be expanding next year, with eighth graders from three additional middle schools enrolled for the fall training session.

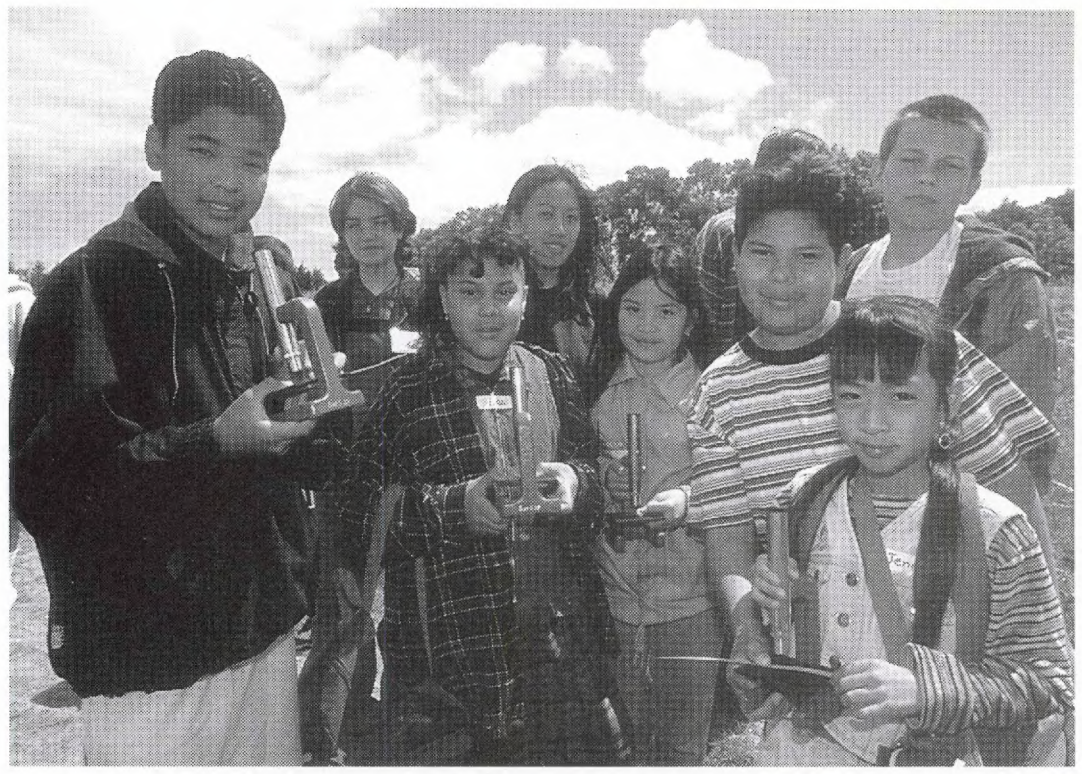


Taking the classroom outdoors at Science at Shoreline.

Also capitalizing on the Academy's special capacity to teach through field work are two long-standing but revamped programs, Junior Academy and Camp Academy. The young camp participants, many of whom live in stark urban environments, can now learn scientific collection techniques, use real scientific instruments, and investigate the natural world alongside Academy researchers in Golden Gate Park as well as at Pepperwood Ranch and the Bodega Marine Laboratory in Sonoma County. Planning is underway, as well, to add the Presidio to the Academy's roster of instructional field sites next year.

Extending the Academy's outreach to urban, often disadvantaged, youth, the department's intern program annually pairs Academy researchers and educators with some three dozen 15-20 year-olds to teach them biology and public presentation skills. Once

Education



Science at Shoreline

trained, the teens are employed as interpreters in the museum, presenters in outreach programs, camp counselors, and research department aides. Beyond its immediate rewards, the program has been a springboard for several interns to go on to college; many are the first members of their families to pursue a higher education.

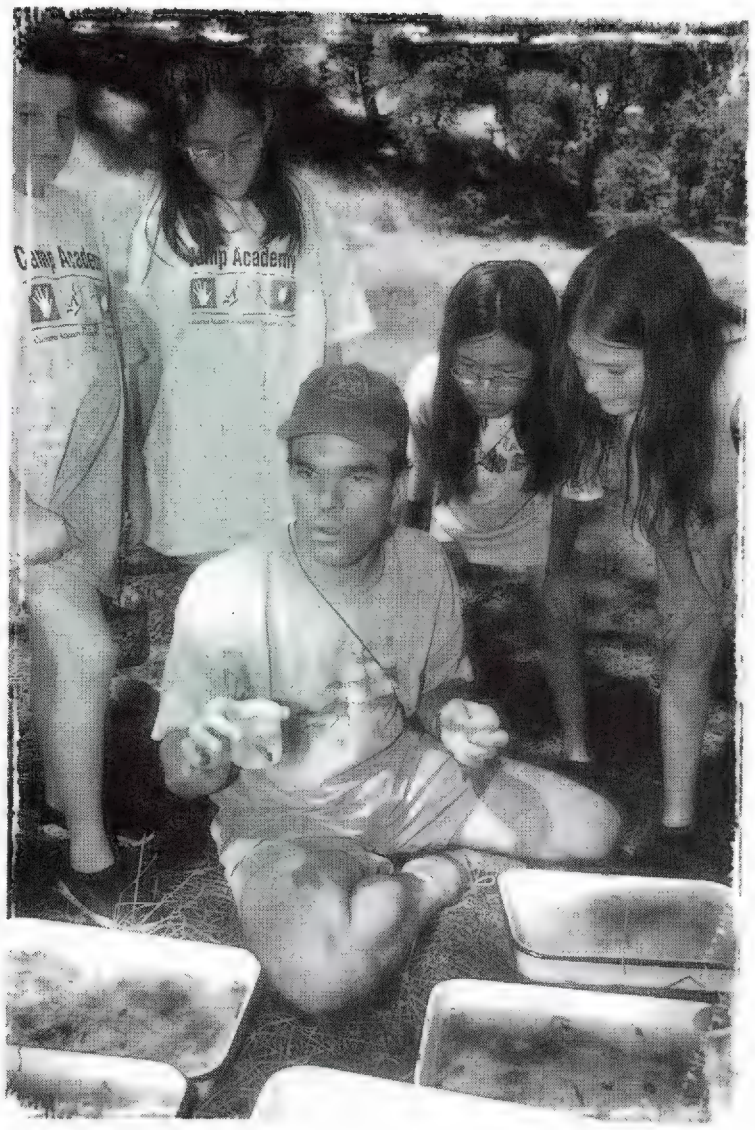
Raising the bar

To continue elevating the quality and reach of Academy educational initiatives, the department has recruited – after a national search – Dr. Meg Burke to serve as Senior Science Educator responsible for all docent training. Formerly on the faculty at the University of Mary in Bismarck, N.D., Dr. Burke is already at work designing next year's training courses. This year the docents, all of whom must complete college-level coursework in their area of specialization, received intensive instruction in evolution to help them better interpret the Life Through Time exhibit for visitors.

To further enhance docent lecture/tours – which are offered daily to visiting school children, as well as through less formal "highlight tours" for more casual visitors – the docents have developed several new "experience" carts, filled with plant and animal fossils, rocks and other specimens which visitors may handle and examine for unmatched tactile learning.

The museum experience is enriched for first and second grade students by the new self-guided tour booklets "Discovering Habitat." Used

Camp Academy students exploring Pepperwood Ranch.



Camp Academy instructor Jack Laws showing students how to analyze pond scum.

by teachers or parents to help them focus their children's educational experience of the natural history museum, the tour booklets are made available in English, Spanish and Chinese, thanks to a grant from Rudolph Peterson.

Teacher training

Reflecting the Academy's commitment to cultural diversity, this year's teachers in residence are from Alice Fong Yu Elementary School, the City's only Chinese-language immersion school. They are working with Academy educators and scientists to develop a new biodiversity curriculum that can ultimately be used throughout the San Francisco Unified School District. Their work is aligned with SFUSD and the Academy, thanks to the coordination provided by a teacher on special assignments to the Academy from the school district.

Digging for aquatic specimen at Bodega Bay.

This year, the 14th in the annual series of day-long seminars for high school biology teachers, three "Bioforums" examined the topics: advances in Deep Sea Biology, Theoretical Issues in Plant Biology and Microbes. Some 416 teachers benefited from the opportunity to exchange information with Academy researchers and other experts on these topics. Hundreds more reviewed the proceedings through video, audio, still images and presentation transcripts on the Academy's website, made possible by a partnership with Genentech's Access Excellence program.

Education 1997-98 at a glance

- Total number of people served by all Education programs: 44,363
- Number of youth enrolled in Junior Academy and Camp Academy: 1,657
- Number of docent presentations: 1,244 on site, 150 through Community Outreach
- Number of volunteers, interns and docents: 1,231
- Hours worked by interns, volunteers, and docents: 77,697

The blockbuster event of the Natural History Museum's 1997-98 exhibition year wasn't a temporary exhibit, for once, but a permanent one - the first, in fact, to debut at the Academy in nearly a decade. This wildly popular new attraction is the Academy's multi-sensory Earthquake exhibit, which opened on the anniversary of the devastating San Francisco temblor of 1906.

Visitors lining up to experience an earthquake in the Sara Hart Kimball Earthquake Theater.

To simulate as closely as possible the full experience of being in an earthquake, the exhibition designers employed a multi-media theater setting and complicated technology not only to make the earth "move" but also to provide the visual, auditory and even olfactory clues that this is unmistakably the real thing.

While it may afford visitors their first experience of San Francisco's signature cataclysm, Earthquake is no mere thrill ride. Solid, practical information and scientific context are conveyed right along with the excitement. Survivor stories, dynamic geology demonstrations, and interactive instruction in seismically sound construction and earthquake preparedness techniques are intended to leave visitors feeling they've experienced the "real thing." And some visitors will feel they have a greater understanding of, and will be prepared for, what will happen to their homes and families when the next "Big One" hits.

Fun and facts

Continuing the trend to convey relevant information in an engaging - often hands-on - format, the Academy's roster of temporary exhibitions wove together both interactive and aesthetic experiences of the natural world.

Perhaps no exhibit better exemplifies the "fact-filled fun" direction in exhibition design better than the year's first major traveling presentation - Spiders! Live spiders from around the world plus larger-than-life models, films and

Entering the world of spiders.

Natural History Museum

photographs appeared up close and personal to visitors fascinated by these oft-feared but environmentally crucial arthropods. Creative interactive sections allowed visitors, for example, to experience sitting spider-like in the middle of a web and interpreting vibrations from the perimeter.

Hunters of the Sky explored the fascinating world of raptors.

The rain forest environments favored by many of the arthropod family and captured by British artist and Amazon forest defender Margaret Mee (1909-88) may have too often vanished, but the fragile beauty of Amazonia was seen once more during the exhibition Return to the Amazon. Mee's aesthetically celebrated collection of botanical paintings of Amazon flora has never been equalled. The 85 paintings - representing plants of the Brazilian Amazon and its southern coastal forest - were drawn largely from the collections of the Kew Royal Botanic Gardens. Travel artifacts, maps, Mee's collecting basket, and video and audiotapes provided insight into the paintings' remarkable creator - a woman who undertook her first expedition to the Amazon in middle age, in an era when women "didn't do that sort of thing."

A photograph of the artist greeted visitors at the entrance to the Margaret Mee exhibit.

Prized as hunting companions and revered as divine messengers, Hunters of the Sky - the genera of birds known as raptors - swooped into the Academy for a successful spring run marked by extensive demonstrations of live birds in flight. The exhibition focused particularly on the raptors' role in a healthy ecosystem and the factors responsible for their survival or decline. Live presentations underscored the birds' beauty and supported further discussion with school groups not only of biodiversity

1997-98 at a glance

- Total number of visitors: 907,707
- Number of visitors attending 1997-98 temporary exhibits
  - Spiders! 160,200
  - Return to the Amazon: 174,500
  - Hunters of the Sky: 228,000
- Number of school children attending the Museum free: 78,300
- "Free day" attendance: 117,640

issues but also of such scientific principles as aerodynamics. Activity carts, employed by interns and volunteers in other daily hands-on presentations, allowed the exhibit's 228,000 visitors to examine the wings, skulls, and talons that make the Hunters of the Sky such effective birds of prey.

Earth to Mars

Visitors were seemingly transported to outer space when the Academy's popular Morrison Planetarium downloaded and displayed Internet images being broadcast from the surface of Mars by the Pathfinder mission's little Sojourner rover. Going beyond mere display of the photographic images, Plantarium staff collected an array of images to create a 360 degree panoramic view from the Pathfinder landing site, allowing Planetarium-goers to sense what it might be like to stand on Mars.

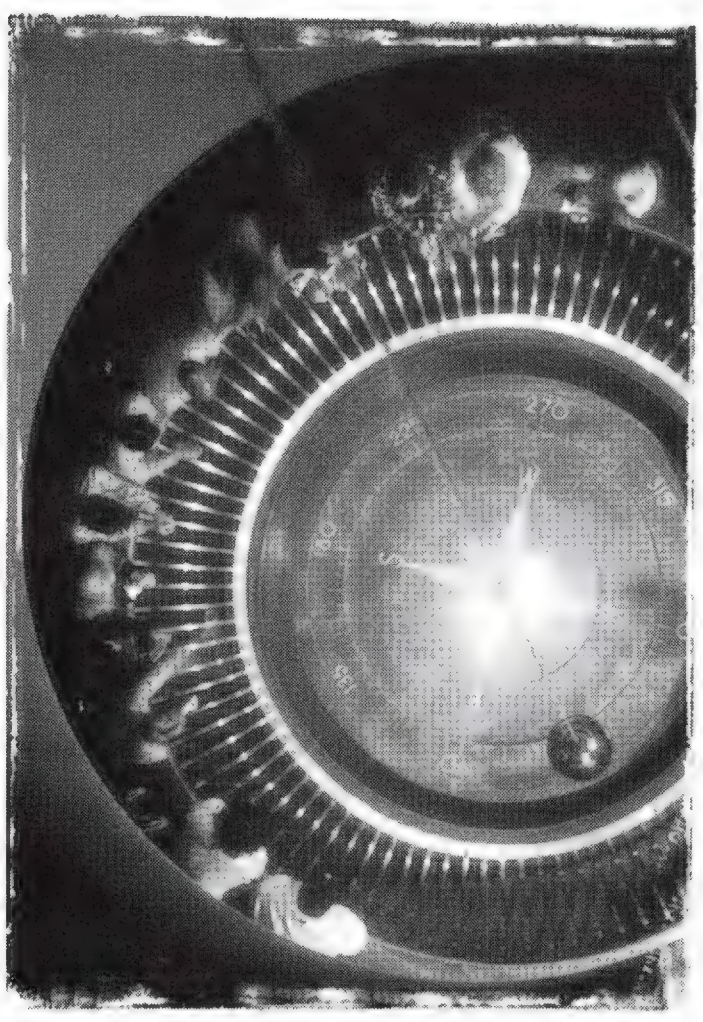
Planetarium 1997-98 at a glance

- Number of visitors: 113,418
- Number of students at school shows: 48,805
- Number of Laserium shows: 517 with total audience of 33,587
- Audience for Dean Lecture Series: 2,838

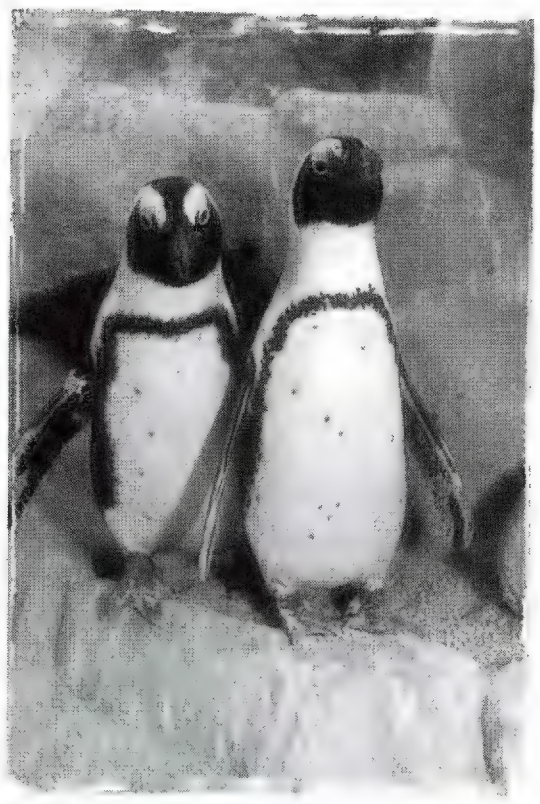
"The Sands of Mars," the "Marsquakes" segment of "Great Shakes" and other new and original shows like "Journey to the Center of the Universe" drew nearly 114,000 armchair astronomers to the Planetarium. Another 4,800 celebrated the holidays by attending the annual favorite night sky show, "The Christmas Star." A Christmas concert by electronic composer Jonn Serrie and an equinox concert by the Dmitri Matheny jazz ensemble tied the ribbon on the season.

School show attendance was up markedly for the year, with nearly 49,000 students – an 11 percent increase – attending curriculum-based astronomy presentations tailored to preschool through high school students.

Finally, the Benjamin Dean Lecture series, which annually brings top astronomers and space scientists to the Academy for public lectures, presented speakers from the James Lick Observatory, UC Berkeley, the University of Washington, NASA/Ames Research Center, and the Jet Propulsion Laboratory.



Watching the pendulum in Earth & Space Hall.



C. FIORITO

Penguins – perennial favorites of visitors to the Steinhart.

Aquarium breeding program tops

Steinhart Aquarium Director Bob Jenkins is justifiably proud: the Academy's recently-introduced captive breeding program for threatened sea horses has produced its third generation of offspring and can now claim the most successful such program in the nation. The Academy has had its greatest success with the Giant Pacific Seahorse. From 32 adults, the Aquarium has generated a record 350-500 live babies - to whom the males give birth from a brood pouch much like a kangaroo's. The heartening results with captive breeding of this difficult-to-raise animal - not to mention the friendly rivalry among the collaborating Aquariums - vastly improve the chances that future efforts like these can take fisheries' pressure off wild populations and that captive-bred animals can ultimately be released into the wild.

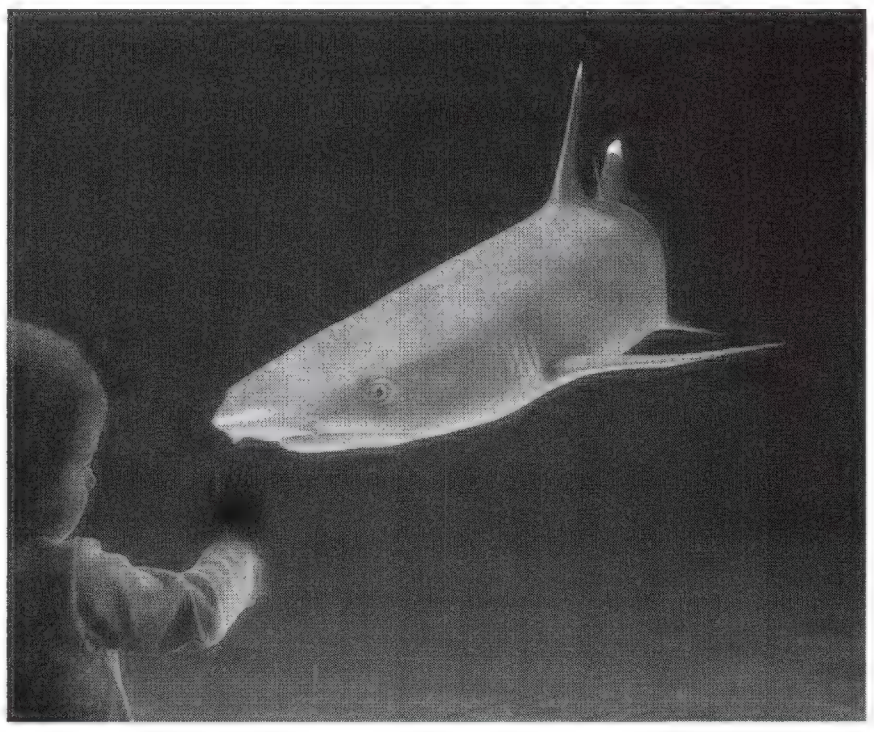
Jorge Gomezjurado with specimen from the sea horse project.

The success of the Seahorse effort - along with similar programs for endangered species of penguins and Chinook salmon - underlines the need to repair and expand the crowded and crumbling nearly 75-year-old Aquarium. The institution-wide Master Planning process is expected to place Aquarium upgrades high on the priority list of projects for the new millenium.

Aquarium 1997-98 at a glance

- Size of collections: 7,000 total specimens, representing 600 species.
- Number of research/breeding projects underway: 6
- Number of student visitor/visiting scientists: 280
- Volunteers supporting the work of the department: 55, contributing 5,300 work hours.
- Seminars, lectures and presentations made: 20

Up close and personal with one of the aquarium's tropical sharks.



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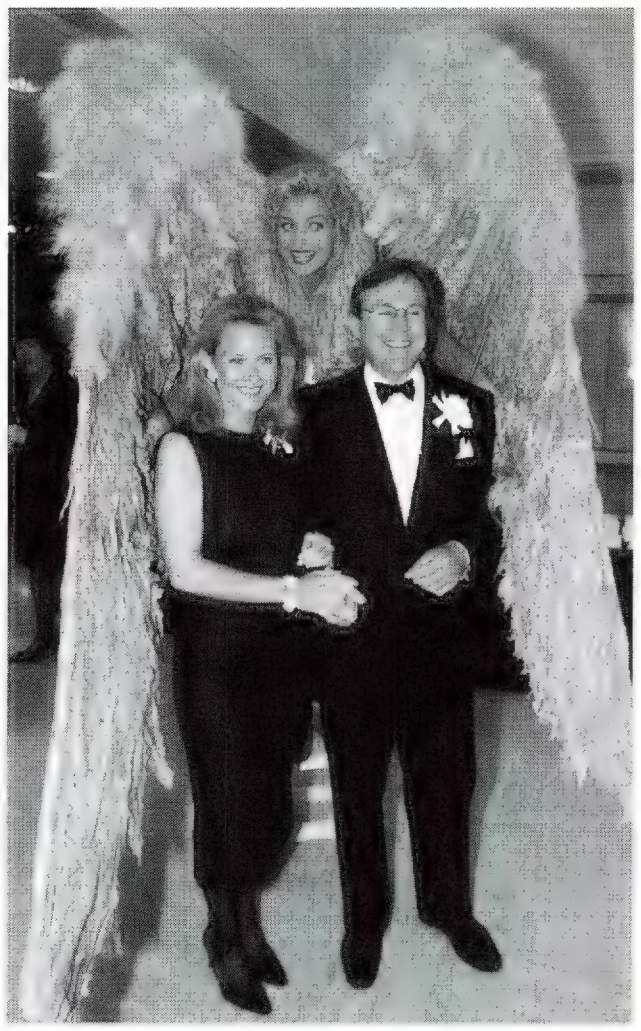

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One especially prominent member of the Fellows is selected annually to receive the institution's highest honor – the Fellows' Medal. At the Annual Fellows' Meeting in October, that honor was bestowed on Dr. Harry Thiers for his outstanding scholarship in the field of mycology and his dedication to teaching. An Academy Fellow since 1964, Dr. Thiers is Professor Emeritus of Biology at San Francisco State University.

Dr. Barbara Thiers accepted the Medal in her father's absence.

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Entomology Chair David Kavanaugh at members' open house.

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Benjamin Olshin, IG
Margaret Orr, Do
Georgina Ortiz, Aq
Collins Orton, AE
Dorothy Oster, Do
Christine Oswald, SE
Ed Ow, Hu DA
Benjamin Owen, Aq
Diane Owens, BC
Alan Pabst, Do
Kathleen Pabst, HL Sp Am Hu Do

Jennifer Pipp, Aq
Sanford Plainfield, HL JP Do BR
Betty Pollock, Am Do BR Ed Hu JP HL SP
Terence Pon, TP
Joan Pont, Do HL
Margaret Poole, JP HL SE Do BR
Susan Poole, JP Do SE BR HL
Barbara Pope, IG
Michael W. Pope, Ic
Brad Post, Aq
Jenny Pramuk, Aq
Kate Prator, BR
Ann Preece, LS Do
Ellen Price, Do
Steven Price, BR SE
Dolores Priem, BC
Judy Prokupek, Do
Robin Prothro, Bo BR

Lois Roth, Do BR
Daniele Rubcic, Aq
Elizabeth Ruck, IG
Rebecca Ruiz, PI
Jim Runner, AE Do
Thea Ruzette, CI CI
Barbara Sabath, Aq
Jessamyn Sabbag, TP
David Salgado, Ex
Talia Salter, Aq
Sergei Samborski, BC
Grace Samson, Li
Ivan Samuels, OM
Doris Sanchez, ID
Alexandra Sangmeister, OM
Raymond Sante, Aq
Ben Saturen, LS
Victoria Saxe, En
Maria Schaefer, IG

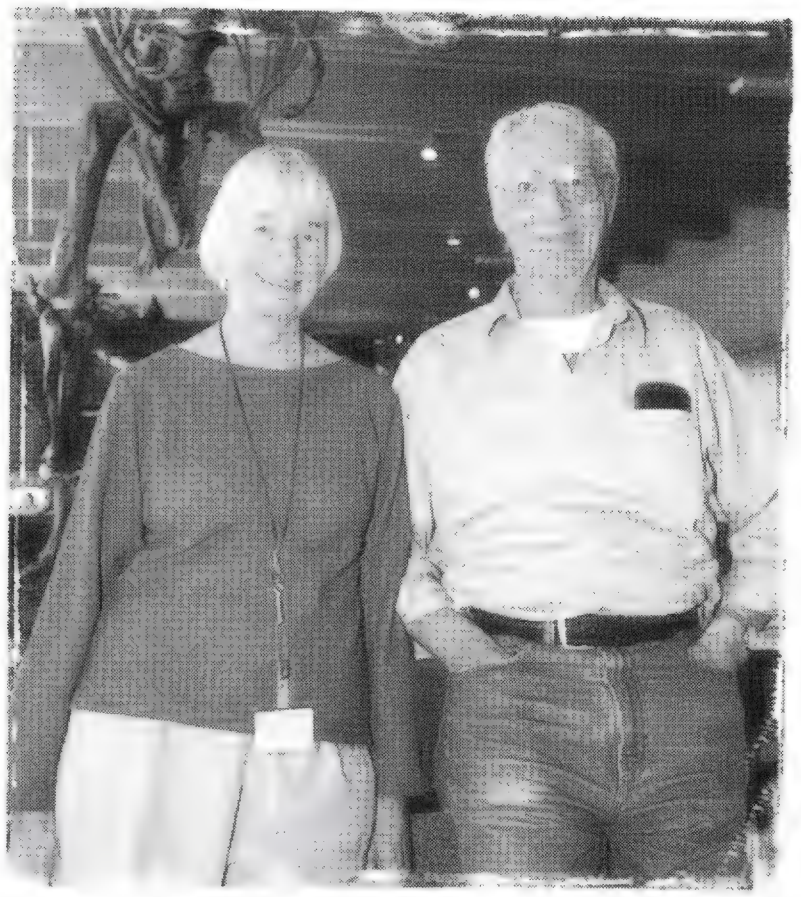
Members discover Ichthyology specimen at the open house.

Dora Nelson, ID
Charles Nemenzo, BC
Jeff Newell, Do
Denise Newman, Hu
Hudelle Newman, Do
Annie Ng, Do HI
Joseph Ng, En
Tina Ng, EM
Vicki Ng, TP IG
Andreas Nguyen, BC
Donald Nguyen, OM
Simon Nguyen, TP
Carland Nicholson, Do
Sheva Nickravesh, CD
Therese Nikas, Bo
Carmela Nilan, SE ID
John Niles, PD
David Nonomura, Aq
Burt Norall, TP
John Northwood, Do
Aksone Nouvong, Aq
Cindy Novak, BC
Sean Nunan, Li
Sunthron Nuntadusit, Ed PI
Michael Nutile, IG
Patricia O'Brien, SE Do BR HL
Lindsay O'Hara, Ex
Patty O'Hara, EC
Damon O'Keefe, Ed

Mark Pabst, IG
Leonard Page, BC
Mary Pagonas, Do HL
Sunny Pak, Bo
Heidi Palacios, Do SE CI
Paul Palestine, Op
Ming Pan, BC
Elizabeth Pannell, Aq
Florence Pardini, Do HL
Branden Park, Aq
Jim Parkinson, HL Do
Luba Parry, AE
Dave Parsons, Aq
Jeffrey Pasco, PI
Nestor Pascual, ID CI
Antonio Paulino, Do HL
Nancy Pease, Do Ed
Jean Pechin, Hu
Jean Perata, Hu
Michel Perekrestenko, IG
Annette Perry, Do
Rebecca Peters, Bo
Dawn Peterson, IG
Chris Petromilli, Aq
Linda Pettigrew, Aq
Shawn Phillips, BC
Nancy Pickford, Do
Guy Pilara, IS
Emily Pipp, Aq

Serena Puga, PD
Steven Pullman, IG
John Qin, En TP
Charlene Quan, CS
Jennifer Quan, Ed
Christopher Quock, Aq
Jane Radcliffe, IG BC
Sabrina Ramirez, BC
Jonathan Randall, PD
Kamalesh Rao, BC
Megan Rathfon, OM
Andrea Raynor, JP
Elizabeth Reed, BC
Kenneth Reed, TP
Kathy Reichardt, Do
Anita Reichel, ID
Cecil Reichert, LS
Louise Reiter, HI Hu TP Do BR Sp SE
Mary Renaker, BR Do SE
Charles Renshaw, Aq
Erin Rentz, LS
Valarie Revels, Li
Jernajeoal Reyes, BC
Andrew Reynolds, BC
Hugh Reynolds, Do SE BR
Julian Rhine, Do
Jean Ribardo, En
Alexandrine Rich, Bo
Diane Richards, CD
Hunter Richards, BC
Elizabeth Rieger, Do
Nancy Riley, Do
Gino Rinaldi, CD
Glen Risdon, Li
Lois Roach, SP
Janet Robbins, Do
Jay Roberson, PI
Rose Roberto, HL Do
Mary Roberts, Do HL
Michael Roberts, CW
John Rocco, Aq
Hase Rodenbaugh, BC Do CD
Helen Rodgers, HL Do
Patricia Rodgers, SE
Manuel Rodriguez, CD
Stacey Rodriguez, CI SE
Barbara Rogers, Do
Bridget Rogers, Aq
Jeanne Rose, Do AE
Anne Rosenthal, PD
Seth Rosenthal, BC
Tinka Ross, IS
Sissy Rossi, HL Do
Bill Roten, BC

Aja Schieman, JP
Marjorie Schmelzer, IG
Herbert Schmidt, Do
LaVerne Schmidt, Do
Morgan Schmidt, Ex
Peter Schmidt, Do
Harold Schneringer, PI
Julia Schoellenbach, DA
Jacqueline Schonewald, OM
Christine Schooley, SE An
Elizabeth Schultz, Do
Wende Schwake, Aq
Paola Scippa, Aq CD
Harry Scott, SP
Norman [Jerry] Scott, Do
Ruth Scott, Do
Linda Seabrooks, En
Sara Seaton, Ed
Frankie Seffens, Do
Lesley Segedy, Do
Joan Serra, ID
Jennifer Setten, Ed
Theresa Sevieri, Li
Rich Seymour, Hu
Amber Shaffer, PD
Ashish Shah, BC
Penelope Shaner, LS
Albert Shell, Do
Fred Shelton, LS OM
Peter Shepard, Ed
Carrie Shepherd, PI
William Shepherd III, Aq
Jessica Sheppard, OM
Walt Shepps, Li
Dan Sherman, Aq CI
Anthony Shew, BC
Naomi Shibata, PW
Charles Shimooka, Aq
Jeanette Shinsako, Bo
Mary Shirley, Aq
Jack Shnider, Do HL
Michelle Shouse, IG
Hannah Silver, BC
Marjorie Silver, Do
Arthur Simpson, BC
Ron Simpson, Bo
Kate Sims, An
Margaret Singer, JP
Beth Singleton, Dv AS
David Siu, Li BC
Christopher Smith, Aq
Clyde Smith, Do
Diana Marie Smith, BR
Jeffrey Smith, En
Jenny So, TP



Volunteers Barbara and Lowell Jennings.

Katrina Socco, En
Jody Soldevila, SE
Debbie Soler, BC
Maria Solis, Do
Kristen Sorensen, Aq
Eriza Sorenson, BC
Sarah Soule, EC
Jill Spangenberg, Aq
Connie Spanier, HL Do
Patricia Sparling, Aq
Carol Spinali, Do
Sherry Spitzer, BC
Anita Spivack, Do
Dimitri Spodine, Aq
Danette St.Onge, Ex
Maggie Stack, Aq
Cecine Stadden, Bo
Brandon Staglin, ID
Barbara Stanton, Do
Cathleen Stark, Li
Tracy Starke, Am Cl SE
Valentin Stayer, BR
Nancy Stearns, DA Sp Hu BC
Erin Steele, DA
Ted Steffens, AE
Judy Stemen, Ex
Max Stepanian, Aq
Tanya Stepanian, Do
Tom Sterner, BC
Jeff Stizza, ID
Desy Stoyanov, Cl BR SE
Eric Strand, Aq
Carol Straus, OM
Mila Stroganoff, Do HL
Kevin Sturm, Aq
Amelia Sugarman, Do
Maile Sullivan, TP
Shawn Sutherland, Aq
Marc Swanson, Aq
Joshua Swartz, CD
Nicole Swartz, An
Carolyn Swett, IG
Paul Swiatko, CD
Alan Swithenbank, BC
Isidore Szczepaniak, OM
Edith Tabak, BC
Nellie Taha, SE
Evangeline Tai, Ex
Gene Takagi, BC
Chikara Takahashi, BC
Marlene Tam, BR
Marilena Tamburello, Ex
Sabrina Tan, EC
Mary Tarlecki, Aq
Andrew Templeman, BC
Kristen Thomas, An
Marilyn Thompson, Am
Margot Timberlake, HL Do
Heather Tine, BC LS
Fong-Yi Ting, Li
Edith Tirado, Cl EC
Martin Tom, Do
Kate Tomlin, BR
Fujita Tomotake, Ex
Alice Tong, Do
David Toren, Bo
Louise Torraco, Do SE HL
Nicole Torres, CD
Michael Toy, EC
Sharon Toy-Choutka, BC OM
Carole Trapnell, Do
Electra Bambi Truong, EC
Le Ion Tsue, Ph
Jennifer Tucker, Aq Cl
Jonathan Tupy, En
Jay Tustin, CD
Carol-Ann Uetake-Shapiro, BC
William Urbani, HL Do
Veronica Uy, CS
Luke Vairo, Aq
Linda Vallee, Hu
Pam Van der Leeden, OM
Jim Vann, PW
Gloria Vasquez, Ed
Robert Venegas, IS
Patricia Venturino, ID
Joan Verdi, Do
Cleo Vilett, TP
Denise Villa, Hu
Nick Villa, Hu
Eleanor Visser, Do Ed Os
Frank Vuong, Op
Kathy Wade, SP
Aaron Walburg, CS
Johnny Walker, Aq
Thomas Walker III, JP EC
Kim Wallace, Bo
Sara Marie Wallace, BR
Janet Walsh, LS
Darren Wan, TP
Sindy Wan, DA
Jeff Warren, Ex
Tamara Warren, Aq
Julie Watanabe, CS
Delcey Watkins, HL Do
Errol Watson, Aq BC
Kathleen Watson, Aq Cl
Jeremie Wattellier, Ed Pl
Barbara Webber, HL SE Do
Merna Wechsler, SE
Kimberley Wegesin, Do Ed
Xuan (Ray) Wei, BC
Daniel Watson Weller, IG
Penny Wells, Do
Terri Werner, IG
Ann Weybright, SE LS ID
Walter Weybright, SE ID
Sonya White, OM
Alfred Wilcox, Do
Lori Wilder, Aq
George Wilhelmsen, BC
Shelly Willard, BC
Eva Williams, SP
Kimberly Williams, PD
Seaberry Williams, IG
Marcella Williamson, BR Do HL
Laura Wilms, Ed
Douglas Wilson, HL Do
Anna Wojdyla, SE
Harold Wollenberg, Op IS
Angela Won, EC BC
Chris Wong, TP
Diane Wong, En
Eva Wong, BC
Judy Wong, Am
Kimberly Wong, He
Lillian Wong, HL Do
Ophelia Wong, Do
Sherrie Wren, Bo
Cynthia Wuketich, SE
Peter Wynne, LS
Jonathan Xiong, Mm Ed SE
Eric Yan, Ed
Nathaniel Yates, JP
Emily Yee, EC ID
May Yee, Dv
Kayo Yokota, Ex
Earl Yorkey, CD
Michael Young, Li SE
Nyda Young, Bo
Tomme Young, BC
Gloria Yu, CS
Rosemary Saulino Yu, EC
Anthony Yuen, DA BC
Flora Zagorites, ID SE
Jerry Zagorites, SE Ex
Steven Zarit, CD AQ
Amber Zarnett, Am
Cay Zilka, Do
Robert Zuparko, En

Assignments

AC Accounting
AE Academy Escort
Am Amber
An Anthropology
Aq Aquarium
AS Academy Store
BC Biodiversity Center
Bo Botany
BR Bears
Bt Bats
CD Certified Diver
CH Cowell Hall Hands-on
Cl Clerical
CS Computer Services
CW California Wild
DA Dinosaur Adventure
Do Docent
Dv Development
EC Early Childhood
Ed Education
En Entomology
Ex Exhibits
He Herpetology
HU Hunters
Ic Ichthyology
ID Information Desk
IG Invertebrates & Geology
IS Instrument Shop
JA Junior Academy
JP Jurassic Park
Li Library
LS Library Special Collec.
Mi Microbes
Mk Marketing
ML Missing Links
Mm Membership
OM Ornithology & Mammalogy
Op Operations
Os Osher Laboratory
Ph Photography
Pl Public Information
PL Planetarium
PP Public Programs
PW Pepperwood Ranch
ScP Scientific Publications
SE Special Events
SH Seahorse Project
SP Spiders
TP Tidepool
VS Volunteer Services

Volunteer Lanier Hines.

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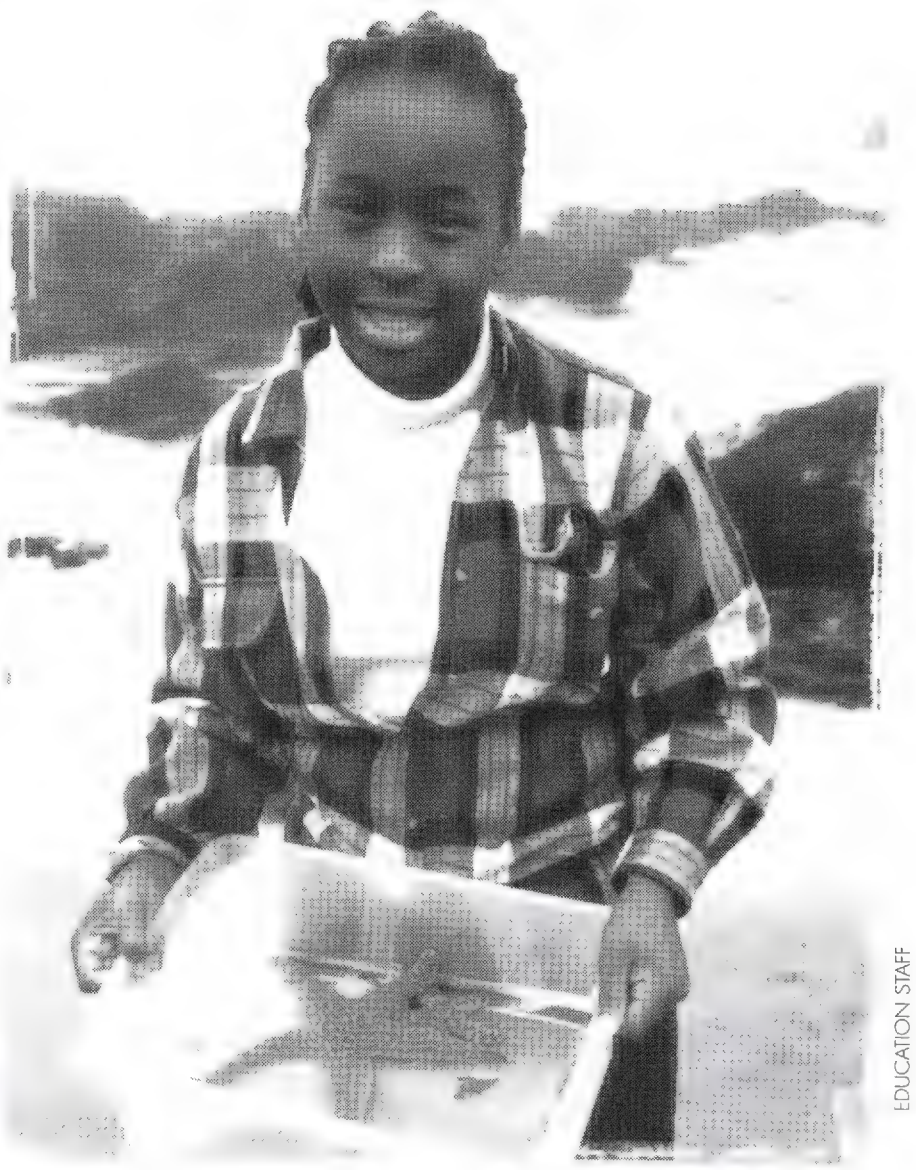
Junior Acdaemy student Chika Emeka discovering aquatic life.



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Collections Manager
Karen Cebra (to 5/98)
Douglas Long (from 5/98)
Postdoctoral Research Associate
Douglas A. Bell
Senior Curatorial Assistant
Lise Thomsen
Curatorial Assistants
Betsey D. Cutler
Andrea Jesse
Christine Petersen
Senior Secretary
Kathleen M. Berge

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Candice O'Keefe
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Robert E. Jones
M. Ross Lein
Dorcas E. MacClintock
Gopinathan K. Menon
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J. Dan Webster
Field Associates
Raymond Bandar
Betsey D. Cutler
Connie Ewald
Ann Getty
James Michael Harris
John Holden
Sylvia Hope
Helen Horblit
Judd A. Howell
Paul A. Jones
Bruce Lee
Michael W. Newcomer
S. Jonathan Stern
Isidore O. Szczepaniak
Marc A. Webber

Osher Laboratory for Molecular Systematics

Senior Research Fellow and Department Head
Robin Lawson
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Ricky Leung
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Volunteer Coordinator
Rosalind Henning
Docent Coordinator
Kathleen Lilienthal

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Youth Programs Manager
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Kristin Lundstrom
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Adult and Family Education Manager
Beth Mason
Grants Officer
Laurel Savino (from 9/97)
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Intern Program Coordinator
Kellyx Nelson
Environmental Educator
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Volunteer Coordinator
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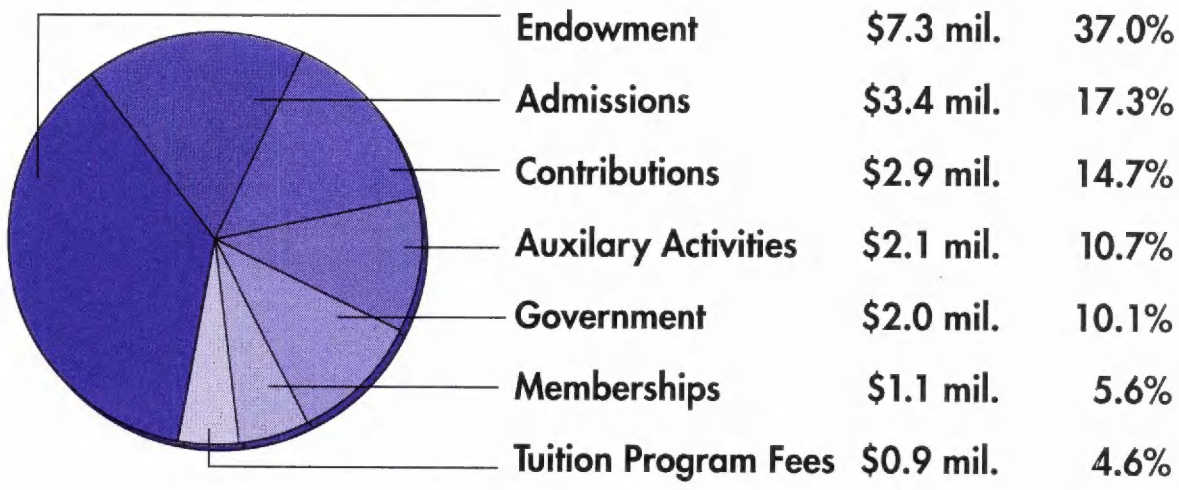
Kathleen Lilienthal
Department Secretary
Consuelo de Castro (to 1/98)
Adult and Family Education Program Assistant
Margo Yetemwork (from 6/98)
Intern Program Assistant
Melissa Marks

Balance Sheet

June 30, 1998 with comparative totals for 1997				Total All Funds	
Assets	**Operating**	**Plant**	**Endowment**	**1998**	**1997**
Cash & Equivalents	355,068	457,472	543,808	1,356,348	1,328,585
Investments in Marketable Securities	4,107,248	11,770,257	114,006,089	129,883,594	103,504,626
Receivables:					
Research Grants	38,199			38,199	149,375
Interest & Dividends	331,922	166,183		498,105	346,327
Other	177,144	4,424		181,568	151,395
Contributions	1,399,958			1,399,958	2,299,282
Inventory	467,692			467,692	565,029
Prepaid Expenses	331,209			331,209	432,813
Investments Held in Trust			3,847,695	3,847,695	4,033,510
Property & Equipment at cost,					
less Accumulated Depreciation		35,659,529		35,659,529	35,001,937
Total Assets	**7,208,440**	**48,057,865**	**118,397,592**	**173,663,897**	**147,812,879**
Liabilities & Net Assets					
Accrued Expenses & Other Liabilities	1,624,532	10,788	112,116	1,747,436	2,649,866
Deferred Income	135,912			135,912	109,264
Annuities Payable			1,653,127	1,653,127	1,977,291
Total Liabilities	**1,760,444**	**10,788**	**1,765,243**	**3,536,475**	**4,736,421**
Unrestricted Net Assets:					
Available for Operations	2,999,564		6,511,305	9,510,869	8,628,187
Designated for Long-Term		35,659,529		35,659,529	35,001,937
Designated for Endowment			93,803,895	93,803,895	78,462,622
Total Unrestricted Net Assets	2,999,564	35,659,529	100,315,200	138,974,293	122,092,746
Temporarily Restricted Net Assets	2,448,432	12,387,548	1,656,763	16,492,743	6,809,998
Permanently Restricted Net Assets			14,660,386	14,660,386	14,173,714
Total Net Assets	**5,447,996**	**48,047,077**	**116,632,349**	**170,127,422**	**143,076,458**
Total Liabilities & Net Assets	**7,208,440**	**48,057,865**	**118,397,592**	**173,663,897**	**147,812,879**

Revenue: $19.7 million

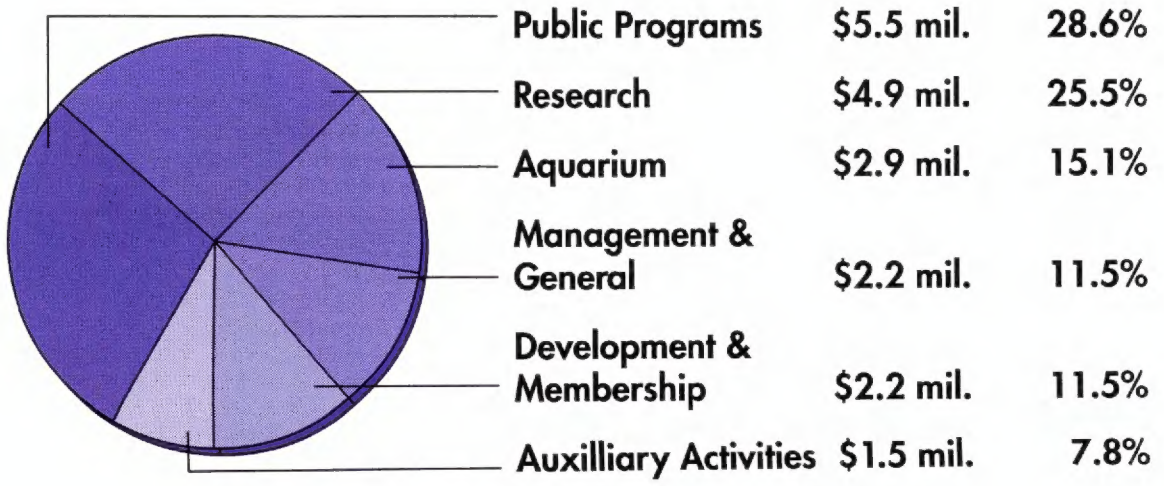

Endowment $7.3 mil. 37.0%
Admissions $3.4 mil. 17.3%
Contributions $2.9 mil. 14.7%
Auxilary Activities $2.1 mil. 10.7%
Government $2.0 mil. 10.1%
Memberships $1.1 mil. 5.6%
Tuition Program Fees $0.9 mil. 4.6%

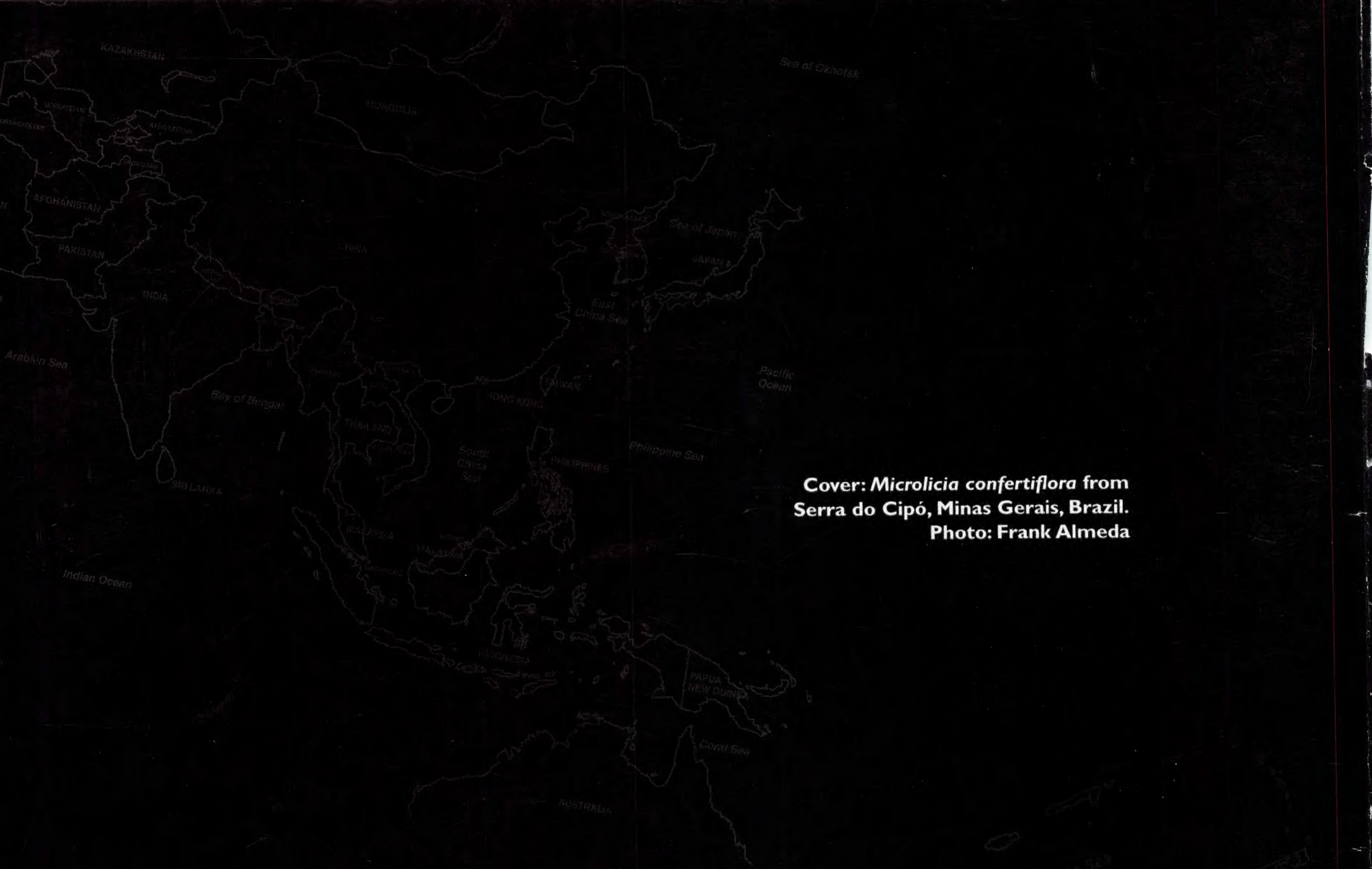
Statement of Activities

Years Ended June 30, 1998 and 1997

Changes in Net Assets	Operating	Plant	Endowment	Total All Funds 1998	1997
Revenue & Gains					
Admissions	3,440,414			3,440,414	3,352,277
Contributions	2,906,798	10,154,704	636,173	13,697,675	7,506,287
Memberships	1,135,104			1,135,104	1,074,895
Tuition & Program Fees	867,654			867,654	1,126,300
Auxiliary Activities	2,062,709			2,062,709	2,311,298
Government Grant Income	276,425			276,425	339,910
City & County of San Francisco	1,691,304			1,691,304	1,561,213
Investment Income	4,253,813	450,276		4,704,089	2,071,804
Net Realized and Unrealized Gains on Long-Term Investments	3,071,179	146,752	16,936,787	20,154,718	19,952,749
Total Revenue & Gains	**19,705,400**	**10,751,732**	**17,572,960**	**48,030,092**	**39,296,733**
Expenses					
Research	4,867,740	515,814		5,383,554	5,141,098
Public Programs	5,476,078	539,394		6,015,472	6,665,501
Aquarium	2,933,641	299,172		3,232,813	2,855,398
Development & Membership	2,223,415	279,831		2,503,246	2,598,601
Auxiliary Activities	1,512,778	57,476		1,570,254	1,810,146
Management & General	2,223,681	50,108		2,273,789	2,107,845
Total Expense	**19,237,333**	**1,741,795**	**0**	**20,979,128**	**21,178,589**
Transfers Between Funds					
Capital Expenditures	(1,751,076)	1,751,076			
Other Transfers	936,071	(341,256)	(594,815)		
Increase/(Decrease) in Net Assets	**(346,938)**	**10,419,757**	**16,978,145**	**27,050,964**	**18,118,144**
Net Assets Beginning of Year	**5,794,934**	**37,627,320**	**99,654,204**	**143,076,458**	**124,958,314**
Net Assets End of Year	**5,447,996**	**48,047,077**	**116,632,349**	**170,127,422**	**143,076,458**

Operating Expenses: $19.2 million


Public Programs $5.5 mil. 28.6%
Research $4.9 mil. 25.5%
Aquarium $2.9 mil. 15.1%
Management & General $2.2 mil. 11.5%
Development & Membership $2.2 mil. 11.5%
Auxilliary Activities $1.5 mil. 7.8%



Cover: *Microlicia confertiflora* from Serra do Cipó, Minas Gerais, Brazil.
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